UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/751,332	12/28/2000	Darwin A. Engwer	3239P069	7669

8791	7590	03/03/2005

BLAKELY SOKOLOFF TAYLOR & ZAFMAN
12400 WILSHIRE BOULEVARD
SEVENTH FLOOR
LOS ANGELES, CA 90025-1030

EXAMINER
ELALLAM, AHMED

ART UNIT	PAPER NUMBER
2662	

DATE MAILED: 03/03/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

PTO-90C (Rev. 10/03)

	Application No.	Applicant(s)
Office Action Summary	09/751,332	ENGWER ET AL.
	Examiner	**Art Unit**	
	AHMED ELALLAM	2662	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE <u>3</u> MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.
- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
  Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on <u>06 October 2004</u>.

2a)☒ This action is **FINAL**.   2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☐ Claim(s) <u>2-11,13-22 and 24-36</u> is/are pending in the application.

     4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) <u>2-11,13-22 and 24-36</u> is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

     Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

     Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

     a)☐ All   b)☐ Some *   c)☐ None of:

       1.☐ Certified copies of the priority documents have been received.

       2.☐ Certified copies of the priority documents have been received in Application No. _____.

       3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

     * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1)☒ Notice of References Cited (PTO-892)

2)☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)

3)☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
     Paper No(s)/Mail Date _____.

4)☐ Interview Summary (PTO-413)
     Paper No(s)/Mail Date. _____.

5)☐ Notice of Informal Patent Application (PTO-152)

6)☐ Other: _____.

U.S. Patent and Trademark Office

PTOL-326 (Rev. 1-04)   Office Action Summary   Part of Paper No./Mail Date 20050225

DETAILED ACTION

This communication is responsive to amendment filed on October 6, 2004. The

Amendment has been entered.

Claims 2-11, 13-22, 24-36 are pending. All the pending claims are rejected.

Claim Rejections - 35 USC § 102

(b) the invention was patented or described in a printed publication in this or a foreign country or in public
use or on sale in this country, more than one year prior to the date of application for patent in the United
States.

1.   Claims 2-9, 11, 13-20, 22, 24-31 and 33-36 are rejected under 35 U.S.C. 102 (b)

as

being anticipated by Fischer et al (US 5,889,772) hereafter Fischer.

Regarding claims 9, 20, 31, Fischer discloses a method (col 5 lines 11-14),

means (col 5 lines 3446), and machine readable medium (inherent; the controller of

figure 6 must require machine code to execute) of automatically adjusting a

fragmentation threshold for data transmissions between an access point ("WLAN

controller 100" figure 6; col 7 lines 33-36) and one or more associated wireless units

(Wireless LAN stations; col 7 lines 40-46) via a wireless medium associated with a

wireless network system including a wired backbone network, comprising:

determining a transmission error factor indicative of errors occurring in the

transmission of one or more data packets between the access point and the one or

more associated wireless units (calculate a ratio of packet-fails count to packet-

transmitted (BER) between transmission and destination station; For example see col

12 lines 6-20)., and

automatically adjusting the fragmentation threshold based on the transmission

error factor (Based on the BER ratio, the monitor and adjust unit 112 adjusts the

fragmentation threshold level; col 12 lines 14-18).

Fischer further discloses where automatically adjusting the fragmentation

threshold comprises changing the fragmentation threshold by a fixed quantity and by a

divisional factor each time the fragmentation threshold is adjusted, where the

fragmentation threshold depends on a pre-determined fragmentation threshold divided

by the divisional factor (adjusting the fragmentation threshold level for providing

fragmentation of data frames to be transmitted to the first destination station according

to the ratio of the incremented count of the failures to the incremented count of the

attempts; col 12 lines 6-15).

Regarding claims 2, 13, and 24 Fischer discloses where determining the

transmission error factor comprises transmitting the on or more data packets', and

determining the transmission error factor based on a number of acknowledgement

packets received in response to the transmitted one or more data packets (the monitor

counts the number of failures to receive a ACK frame from each destination address

after the frame was transmitted, and keeps this number as the BER fails count; col 11

lines 20-41 and 60-67; also see col 12 lines 1-7).

Regarding claims 3, 14, and 25 Fischer discloses where the transmission error

factor depends on a number of errors occurring in the transmission of the one or more

data packets for a given time period (the monitor counts the number of failures to receive a ACK frame from each destination address after the frame was transmitted, and keeps this number as the BER; col 11 lines 20-60 and 60-67; also see col 12 lines 1-7).

Regarding claims 4, 15, and 26 Fischer discloses where the transmission error factor depends on clusters of transmission errors greater than sporadic transmission errors in the transmission of the one or more data packets (the fragmentation threshold is adjusted based on the bit error rate factor of the current data transmission between 2 stations. A burst of concentrated transmission errors would thereby increase the bit error rate more so than sporadic transmission errors; col 12 lines 7-20)

Regarding claims 5-7, 16-18, and 27-29 Fischer discloses where automatically adjusting the fragmentation threshold comprises

comparing the transmission error factor to an upper threshold', and decreasing the fragmentation threshold if the transmission error factor is above the upper threshold (Fischer's embodiment allows the fragmentation threshold to be dynamically adjusted to maximize the WLAN throughput for the current operating conditions. The fragmentation threshold is adjusted according to the bit error rate ratios between a transmitting station and a receiving station. If the BER reaches a certain higher value, the monitor and adjust unit 112 will lower the fragmentation threshold until the packets have a lower rate of error; for example see col 12 lines 7-20 and 42-55) ;

comparing the transmission error factor to a lower threshold', and increasing the fragmentation threshold if the transmission error factor is below the lower threshold if

the BER reaches a certain lower value, it is inherent the monitor and adjust unit

112 will raise the fragmentation threshold until the packets have an acceptable

rate of error to maximize throughput; col 3 lines 65-67 and col 4 lines 34-38).

Regarding claims 8, 19, and 31 Fischer discloses where automatically adjusting

the fragmentation threshold comprises changing the fragmentation threshold by a fixed

quantity and by a divisional factor each time the fragmentation threshold is adjusted,

where the fragmentation threshold depends on a pre-determined fragmentation

threshold divided by the divisional factor (adjusting the fragmentation threshold level for

providing fragmentation of data frames to be transmitted to the first destination station

according to the ratio of the incremented count of the failures to the incremented count

of the attempts; col 12 lines 6-15).

Regarding claims 11, 22, and 33 Fischer discloses where the pre-determined

fragmentation is related to a maximum packet size for transmission over the wireless

medium (the WLAN sets a pre-determined fragmentation threshold level equal to

minimum length of a data frame subject to fragmentation, meaning a maximum length

that will not be subject to fragmentation; col 4 lines 13-20).

Regarding claims 34-36 Fischer discloses a method (col 5 lines 11-14), means

(col 5 lines 34-46), and machine readable medium (inherent; the controller of figure 6

must require machine code to execute) of automatically adjusting a fragmentation

threshold for data transmissions between an access point ("WLAN controller 100" figure

6; col 7 lines 3346) and one or more associated wireless units (Wireless LAN stations;

col 7 lines 40-46) via a wireless medium associated with a wireless network system

including a wired backbone network, comprising:

determining a transmission error factor indicative of errors occurring in the

transmission of one or more data packets between said access point and said one or

more associated wireless units (calculate a ratio of packet-fails count to packet-

transmitted (BER) between transmission and destination station; For example see col

12 lines 6-20)., and

automatically adjusting said fragmentation threshold based on said transmission

error factor (Based on the BER ratio, the monitor and adjust unit 112 adjusts the

fragmentation threshold level; col 12 lines 14-18), where the one or more data packets

each have a finite time duration (the BER is based on the time intervals of packets

transmitted and acknowledgement messages received. The importance on timely

reception of these packets signifies a time duration for each packet; col 11 lines 20-31);

changing the data rate of the transmission of the one or more packets;

automatically adjusting the fragmentation threshold in response to the data rate

change of the transmission of one or more data packets so that the finite time duration

for the one or more packets remains substantially the same (The fragmentation

threshold to be dynamically adjusted to maximize the WLAN throughput for the current

operating conditions. The fragmentation threshold is adjusted according to the bit error

rate ratios between a transmitting station and a receiving station. Due to the

interference of the surrounding environment the data rate will constantly change and the

fragmentation threshold will adjust to result in accurate data packets with similar

transmission times; for example see col 12 lines 7-20 and col 4 lines 34-37).

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all

obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

2.   Claims 10, 21, and 32 are rejected under 35 U.S.C. 103(a) as being

unpatentable over Fischer in view of Bird et al (US 6,657,954) hereafter Bird.

Regarding claims 10, 21, and 32 Fischer discloses where the pre-determined

fragmentation is related to a maximum packet size for transmission over a wireless

network ("wireless local area network"; col 5 lines 1-15).

Fischer, however, does not explicitly disclose that the wireless network is

coupled to a wired backbone network.

Bird discloses a wireless network that uses data flow thresholds to control the

transmission of data in the network. The wireless network is coupled to a wired

backbone network (figure 2; the wireless connection is connected to workstations

connected through a wired network; for example see col 5 lines 50-65).

It would have been obvious to one having ordinary skill in the art at the time the

invention was made to modify Fischer's wireless system that utilizes fragmentation

thresholds to transmit data through a wired network, as taught by Bird. The motivation

would be the ability for a broader and more accessible system that can communicate

globally with many other networks, as explained by Bird in column 5.

Response to Arguments

3.   Applicant's arguments filed October 26 2004 have been fully considered but they

are not persuasive:

Applicants argue that a prima facie case has not been established. Applicants

also argue that Fischer does not teach each and every element set forth in independent

claims 9, 20, 31, and 34-36. Applicant alleged that "nowhere does Fischer teach,

explicitly or inherently an operation, a logic circuit within an access point or software

controlling a logic circuit within an access point to atomically adjusting a fragmentation

threshold by changing fragmentation threshold by a divisional factor each time said

fragmentation threshold is adjusted, wherein said fragmentation threshold depends on a

pre-determined fragmentation threshold divided by said divisional factor".

Examiner respectfully disagrees, Fisher discloses calculating a ratio of packet-

fails count to packet-transmitted (BER) between transmission and destination station,

see col 12 lines 6-20), and Based on the BER ratio, the monitor and adjust unit 112

adjusts the fragmentation threshold level; col 12 lines 14-18, and adjusting the

fragmentation threshold level for providing fragmentation of data frames to be

transmitted to the first destination station according to the ratio of the incremented count

of the failures to the incremented count of the attempts, see col 12 lines 6-15.

Examiner interpreted this feature of adjusting the fragmentation threshold level for

providing fragmentation of data frames to be transmitted to the first destination station

according to the ratio of the incremented count of the failures to the incremented count

of the attempts of Fischer of being the claimed limitation.

Fischer discloses a flow chart as in figure 7, such figure represent a software flow

chart that illustrate the operation of the WLAN (access point and associated wireless

unit), and a controller as in figure 6 (access point) for implementing the various steps of

the software representation. In addition Fischer discloses in figure 6 a host computer

200 and data processing unit, the data processing unit and the host computer inherently

have a medium and logic circuit for implementing the method/program software of figure

7. Therefore, in contrast to Applicant assertions, Fisher does disclose a software for

controlling logic circuit as well as computer readable media.

Applicants have similar argument with reference to claims 34-36. In addition they

alleged that the office action focused on the time duration in receipt of the

acknowledgment packets and not the data packet being transmitted. Examiner

respectfully disagrees, because in the process of adjusting the fragmentation threshold,

the bit error rate is taken into account, which translates to the consideration of the data

rate change in the frame transmission between the transmitting station and a receiving

station, and due to the interference of the surrounding environment the data rate will

constantly change and the fragmentation threshold will adjust to result in accurate data

packets with similar transmission times; for example see col 12 lines 7-20 and col 4

lines 34-37.

Examiner believes, given the broadest reasonable interpretation of the claim

limitations, the rejection of the pending claims is proper.

Conclusion

4.   **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time
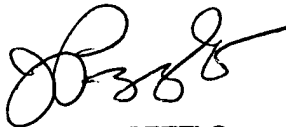
policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE

MONTHS from the mailing date of this action. In the event a first reply is filed within

TWO MONTHS of the mailing date of this final action and the advisory action is not

mailed until after the end of the THREE-MONTH shortened statutory period, then the

shortened statutory period will expire on the date the advisory action is mailed, and any

extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of

the advisory action. In no event, however, will the statutory period for reply expire later

than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the

examiner should be directed to AHMED ELALLAM whose telephone number is (571)

272-3097. The examiner can normally be reached on 9-5:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's

supervisor, Kizou Hassan can be reached on (571) 272-3088. The fax phone number

for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the

Patent Application Information Retrieval (PAIR) system. Status information for

published applications may be obtained from either Private PAIR or Public PAIR.

Status information for unpublished applications is available through Private PAIR only.

For more information about the PAIR system, see http://pair-direct.uspto.gov. Should

you have questions on access to the Private PAIR system, contact the Electronic

Business Center (EBC) at 866-217-9197 (toll-free).

AHMED ELALLAM
Examiner
Art Unit 2662
February 26, 2005

JOHN PEZZLO
PRIMARY EXAMINER